AR-B1672
INDUSTRIAL GRADE
CPU BOARD
User' s Guide

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Table of Contents

0. PREFACE ……3
0.1 COPYRIGHT NOTICE AND DISCLAIMER....3
0.2 WELCOME TO THE AR-B1672 CPU BOARD....3
0.3 BEFORE YOU USE THIS GUIDE....3
0.4 RETURNING YOUR BOARD FOR SERVICE....3
0.5 TECHNICAL SUPPORT AND USER COMMENTS....3
0.6 STATIC ELECTRICITY PRECAUTIONS....4
1. INTRODUCTION....5
1.1 SPECIFICATIONS....5
1.2 PACKING LIST....6
2. INSTALLATION....7
2.1 AR-B1672'S LAYOUT....7
2.2 POWER ON CONNECTOR FOR ATX POWER SUPPLY (ATX1)....8
2.3 CLEAR CMOS (JP4)....8
3. CONNECTION....9
3.1 AUDIO PORT CONNECTOR (AUDIO1)....9
3.2 ULTRA ATA33/66/100 IDE DISK DRIVE CONNECTOR (IDE1, IDE2)....9
3.3 PARALLEL PORT CONNECTOR (PRINT1)....10
3.4 SERIAL PORTS (COM1, COM2)....11
3.5 COM1 RS-232/RS-485 SELECT (XP1, XP2)....11
3.5 KEYBOARD / MOUSE CONNECTOR (PS1, PS2)....12
3.6 USB PORT CONNECTOR (USB1)....12
3.7 IRDA INFRARED INTERFACE PORT (IR1)....12
3.8 FAN CONNECTOR (FAN1)....13
3.9 ETHERNET RJ45 CONNECTOR (LAN1)....13
3.10 VGA CRT CONNECTOR (VGA1)....13
3.11 FLOPPY DRIVE CONNECTOR (FDD1)....14
3.12 DOC SOCKET (DOC1)....14
3.12.1 D.O.C. Memory Bank Address Select (JP2)....14
3.13 GENERAL PURPOSE I/O (GPIO1)....15
3.13.1 GPIO Address Select (JP3)....15
3.14 POWER CONNECTOR (PWR2, PWR1)....15
3.15 LCD & LVDS FUNCTION....16
3.15.1 18-Bits LCD PANEL CONNECTOR (LCD1)....16
3.15.2 LVDS PANEL CONNECTOR (LVDS1)....16
3.15.3 LVDSVCC & LCDVCC VOLTAGE SELECT (LVDSV1)....17
3.16 INTERNAL & EXTERNAL BUZZER (ESPK1)....17
3.17 RESET SWITCH (RST1)....17
3.18 EXTERNAL LED HEADER (LED1)....17
3.19 PC/104 CONNECTOR (PC-104)....17
4. WATCHDOG TIMER....18
4.1 WATCHDOG TIMER SETTING....18
4.2 WATCHDOG TIMER TRIGGER....18
5. BIOS CONSOLE....19
5.1 BIOS SETUP OVERVIEW....19
5.2 STANDARD CMOS SETUP....20
5.3 ADVANCED CMOS SETUP....21
5.4 ADVANCED CHIPSET SETUP....23
5.5 POWER MANAGEMENT....24
5.6 PCI/PLUG AND PLAY....25
5.7 PERIPHERAL SETUP....26
5.8 AUTO-DETECT HARD DISKS....27
5.9 PASSWORD SETTING....27
5.10 LOAD DEFAULT SETTING....27
5.10.1 Auto Configuration with Optimal Setting....27
5.10.2 Auto Configuration with Fail Safe Setting....27
5.11 BIOS EXIT....27
5.12 BIOS UPDATE....28
APPENDIX A. ADDRESS MAPPING....29
APPENDIX B. INTERRUPT REQUEST (IRQ)....30

0. PREFACE

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0.2 WELCOME TO THE AR-B1672 CPU BOARD

This guide introduces the Acrosser AR-B1672 CPU Board.
Use information provided in this manual describes this card's functions and features. It also helps you start, set up and operate your AR-B1672. General system information can also be found in this publication.

0.3 BEFORE YOU USE THIS GUIDE

Please refer to the Chapter 1, "Introduction" in this guide, if you have not already installed this AR-B1672. Check the packing list before you install and make sure the accessories are completely included.
AR-B1672 CD provides the newest information regarding the CPU card. **Please refer to the files of the enclosed utility CD.** It contains the modification and hardware & software information, and adding the description or modification of product function after manual printed.

0.4 RETURNING YOUR BOARD FOR SERVICE

If your board requires any services, contact the distributor or sales representative from whom you purchased the product for service information. If you need to ship your board to us for service, be sure it is packed in a protective carton. We recommend that you keep the original shipping container for this purpose.
You can help assure efficient servicing for your product by following these guidelines:
1. Include your name, address, daytime telephone, facsimile number and E-mail.
2. A description of the system configuration and/or software at the time of malfunction.
3. A brief description of the problem occurred.

0.5 TECHNICAL SUPPORT AND USER COMMENTS

Users comments are always welcome as they assist us in improving the quality of our products and the readability of our publications. They create a very important part of the input used for product enhancement and revision.
We may use and distribute any of the information you provide in any way appropriate without incurring any obligation.
You may, of course, continue to use the information you provide.
If you have any suggestions for improving particular sections or if you find any errors on it, please send your comments to Acrosser Technology Co., Ltd. or your local sales representative and indicate the manual title and book number.
Internet electronic mailto:Sales@acrosser.com
acrosser@tp.globalnet.com.tw

0.6 STATIC ELECTRICITY PRECAUTIONS

Before removing the board from its anti-static bag, read this section about static electricity precautions. Static electricity is a constant danger to computer systems. The charge that can build up in your body may be more than sufficient to damage integrated circuits on any PC board. It is, therefore, important to observe basic precautions whenever you use or handle computer components. Although areas with humid climates are much less prone to static build-up, it is always best to safeguard against accidents that may result in expensive repairs. The following measures should be sufficient to protect your equipment from static discharge:

- Touch a grounded metal object to discharge the static electricity in your body (or ideally, wear a grounded wrist strap).
- When unpacking and handling the board or other system components, place all materials on an anti-static surface.
- Be careful not to touch the components on the board, especially the "golden finger" connectors on the bottom of the board.

1. INTRODUCTION

Welcome to the AR-B1672 ISA Single Board Computer. The AR-B1672 board is PIC form factor board, which comes equipped with high performance VIA ® Eden or C3 Processor with the VIA ® advanced chipset Apollo PLE133T (VT8601T and VT82C686B). This product is designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

In addition, the AR-B1672 provides on chip VGA. The VGA, which provides up to True Color (32 bit) 1024x768, or High Color (16 bit) 1280x1024 resolution. The VGA memory is share main memory.

AR-B1672 have one network controller on board, uses RealTek 8100B LAN controller, a fully integrated 10/100BASE-TX solution with high performance networking functions and Alert-on-LAN features.

1.1 SPECIFICATIONS

- **CPU:** VIA ® Eden 400MHz EBGA
  (Optional : C3 and other frequencies)
- **DMA channels:** 7
- **Interrupt levels:** 15
- **Chipset:** VIA ® Apollo PLE133T (VT8601T Integrated 2D / 3D graphics accelerator and VT82C686B)
- **RAM memory:** Provide one 144 pin SO-DIMM socket. The memory capability is up to 512MB.
- **VGA Controller:** Embedded VGA controller, Screen Resolution: up to True Color (32 bit)1024x768, or High Color(16 bit) 1280x1024.
- **Display Interface:** CRT – D-SUB 15-pin female connector
  LVDS – for 18 bit TFT LCD Panel, 2x13x2.00mm pin-header connector
  LCD – for 18 bit TFT LCD Panel, 2x22x2.00mm pin-header connector
- **Ultra ATA/33/66/100 IDE Interface:** Two PCI Enhance IDE channel. The south bridge VT82C686B supports Ultra ATA/33/66/100 IDE interface. To support Ultra ATA66/100 Hard disk, a specified cable must be available.
- **Floppy disk drive interface:** 2.88 MB, 1.44MB, 1.2MB, 720KB, or 360KB floppy disk drive.
- **SSD:** Support one socket for DiskOnChip.
- **Series ports:** Two high-speed 16C550 compatible UARTs ports
  COM1: On-board D-SUB 9-pin male external port. Share with RS-485
  COM2: On-board one 2x5x2.54mm Box-Header connector. Only RS-232C.
- **Parallel Port**: one IEEE1284 compatible Bi-directional ports
- **IrDA port:** Supports IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR port multiplexed on COM2.
- **USB port:** Support two USB 1.1 compatible ports.
- **Audio: Onboard AC'97 Codec,** Supports two channel Left/Right Line IN/OUT, and Left/Right speaker out, MIC IN, CD IN.
- **Watchdog timer:** Software programmable 1~63sec.
- **RealTek RTL8100B Fast Ethernet Multifunction PCI Controller:** IEEE 802.3u Auto-Negotiation support for 10BASE-T/100BASE-TX standard. Fast back-to-back transmission support with minimum interframe spacing. Connected to your LAN through RJ45 connector.
- **Keyboard Connector & PS/2 Mouse:** Port on-board
- **Power Consumption:** +5VSB @0.25A,+5V@3.8A (Max),+12V@0.5A(Max)
- **Operating Temperature:** 0° ~ 60℃ (CPU needs Cooler)

1.2 PACKING LIST

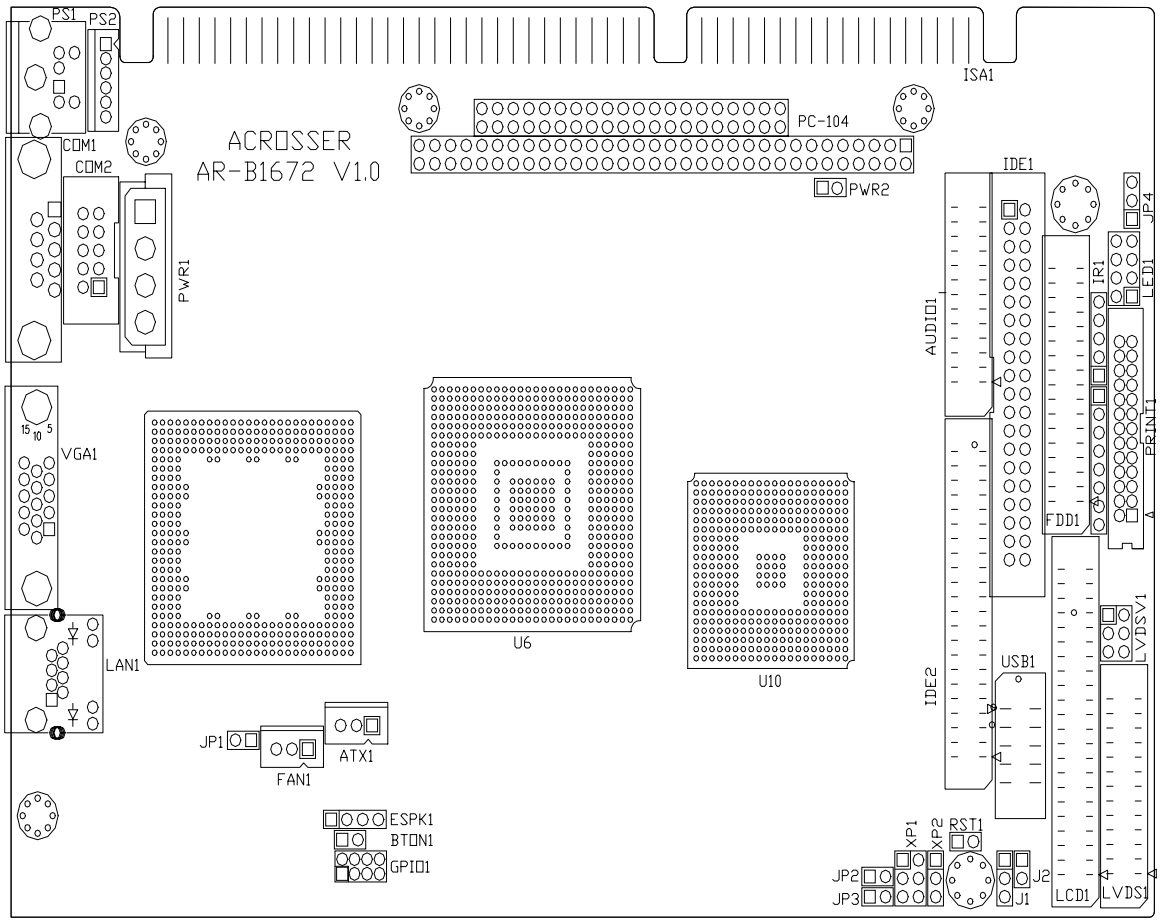
In addition to this *User's Manual*, the AR-B1672 package includes the following items:

- The quick setup manual
- 1 AR-B1672 CPU board
- 1 Hard disk drive adapter cable (40Pin)
- 1 Hard disk drive adapter cable (44Pin)
- 1 Floppy disk drive adapter cable
- 1 Parallel port and serial port adapter cable mounted on one bracket
- 1 Software utility CD
- 1 PS/2 Mouse & Keyboard interface Y-cable
- 1 Audio interface cable mounted on one bracket /AR-B9425A (option)
- 2 USB ports on one bracket/Acrosser NO.190030136 (option)

2. INSTALLATION

This chapter describes how to install the AR-B1672. At first, the layout of AR-B1672 is shown, and the unpacking information that you should be careful is described. The following lists the jumpers and switches setting for the AR-B1672's configuration.

2.1 AR-B1672'S LAYOUT



2.2 POWER ON CONNECTOR FOR ATX POWER SUPPLY (ATX1)

1 2 3

PIN	Signal
1	PSON
2	VCC
3	5VSB

* When AT power supplier is applied, jumper 2&3 should be tied together. (Factory preset)
* When ATX power supplier is applied, pin1&pin 3 should be connect to proper location of ATX power supplier.

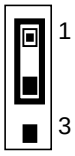
- **ATX POWER BUTTON (BTON1)**

1 2

Pin	Signal
1	-PWBN
2	GND

2.3 CLEAR CMOS (JP4)

If want to clear the CMOS Setup (for example when you forgot the password, please clear the setup and then set the password again.), you should close the pin 2-3 about 3 seconds, then open again, set back to normal operation mode, close the pin 1-2.

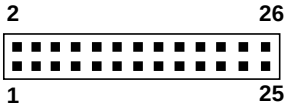


JP4	FUNCTION
1-2 ON	Normal Operation (Factory Preset)
2-3 ON	Clear CMOS

3. CONNECTION

This chapter describes how to connect peripherals, switches and indicators to the AR-B1672 board.

3.1 AUDIO PORT CONNECTOR (AUDIO1)



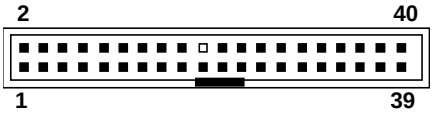
Pin	Signal	Pin	Signal
1	AUXAL	2	LINEL
3	AUXAR	4	LINER
5	+12V	6	+5V
7	AUDIOL	8	MICPH
9	AUDIOR	10	PCSPKO
11	GND	12	GND
13	Not Used	14	Not Used
15	GND	16	GND
17	Not Used	18	Not Used
19	Not Used	20	Not Used
21	Not Used	22	Not Used
23	Not Used	24	Not Used
25	GND	26	GND

Note: the connector does not contain the GAME (MIDI) port signal. When AR-B9425 audio card is used with this CPU board, the GAME port function is not supported. If users want to use the amplified trumpet that is constructed inside, please plug it into the line out. If not, please plug it into the speak-out.

3.2 ULTRA ATA33/66/100 IDE DISK DRIVE CONNECTOR (IDE1, IDE2)

- **IDE1: Primary IDE Connector**

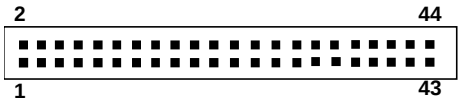
A 40-pin header type connector (IDE1) is provided to interface with up to two embedded hard disk drives (IDE AT bus). This interface, through a 40-pin cable, allows the user to connect up to two drives in a "daisy chain" fashion. To enable or disable the hard disk controller, please use the BIOS Setup program, which is explained further in chapter 5. The following table illustrates the pin assignments of the hard disk drive's 40-pin connector.



Pin	Signal	Pin	Signal
1	-RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N.C
21	PDDREQ	22	GROUND
23	-PDIOW	24	GROUND
25	-PDIOR	26	GROUND
27	PIORDY	28	GROUND
29	-PDDACK	30	GROUND
31	IRQ14	32	N.C
33	PDA1	34	PD66/100
35	PDA0	36	PDA2
37	-PDCS1	38	-PDCS3
39	HLEDP	40	GROUND

- **IDE 2: Second IDE Connector**

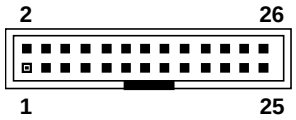
AR-B1672 also provides IDE interface 44-pin connector to connect with the hard disk device.



Pin	Signal	Pin	Signal
1	-RESET	2	GROUND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GROUND	20	N.C
21	SDDREQ	22	GROUND
23	-SOIOW	24	GROUND
25	-SOIOR	26	GROUND
27	SIORDY	28	GROUND
29	-SDDACK	30	GROUND
31	IRQ15	32	GROUND
33	SDA1	34	N.C
35	SDA0	36	SD66/100
37	-SDCS1	38	-SDCS3
39	HLEDS	40	GROUND
41	VCC	42	VCC
43	GROUND	44	N.C

3.3 PARALLEL PORT CONNECTOR (PRINT1)

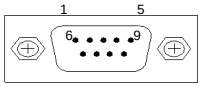
This port is usually connected to a printer. The AR-B1672 includes an on-board parallel port, and accessed through a 26-pin flat-cable connector. Three modes –SPP, EPP and ECP – are supported.



Pin	Signal	Pin	Signal
1	-STB	2	-AFD
3	PD0	4	-ERROR
5	PD1	6	-INIT
7	PD2	8	-SLIN
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	-ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	N.C

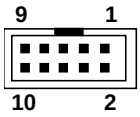
3.4 SERIAL PORTS (COM1, COM2)

- **COM1 D-SUB 9-PIN**



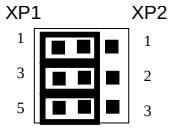
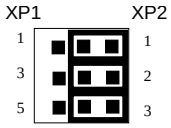
PIN	Signal	PIN	Signal
1	/DCD1	2	RXD1
3	TXD1	4	/DTR1
5	GND	6	/DSR1
7	/RTS1	8	/CTS1
9	/RI1	10	GND

- **COM2 10-pin Connector**

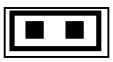


PIN	Signal	PIN	Signal
1	/DCD2	2	/DSR2
3	RXD2	4	/RTS2
5	TXD2	6	/CTS2
7	/DTR2	8	/RI2
9	GND	10	NC

3.5 COM1 RS-232/RS-485 SELECT (XP1, XP2)

JUMPER	FUNCTION
	RS-232 *FACTORY PRESET*
	RS-485

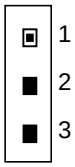
- **RS-485 Terminator Select (J2)**



J2 (ON)
FACTORY PRESET

* When there is only one line the setting should be left off (please take off the jumper), if multiple blocks are used on a single line this should be set to "ON"(place a jumper) in order to properly terminate the connection for better transmission

- **RS-485 Header (J1)**

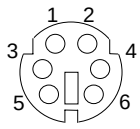


PIN	Signal
1	N485+
2	N485-
3	GND

3.5 KEYBOARD / MOUSE CONNECTOR (PS1, PS2)

The AR-B1672 provides 6-PIN JST Header and 6-PIN MINI-DIN keyboard/mouse connector.

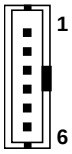
- **PS1: 6-pin Mini-DIN Keyboard/Mouse Connector**



Front View

PIN	Signal
1	KBDATA
2	MSDATA
3	GND
4	VCC
5	MSCLK
6	KBCLK

- **PS2: JST6-pin Keyboard/Mouse Connector**

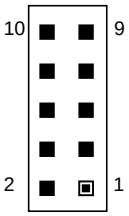


PS2

PIN	Signal
1	MSDATA
2	KBDATA
3	GND
4	VCC
5	MSCLK
6	KBCLK

3.6 USB PORT CONNECTOR (USB1)

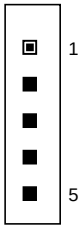
The AR-B1672 provides Two USB port.



PIN	Signal	PIN	Signal
1	VCC	2	VCC
3	USBD0-	4	USBD1-
5	USBD0+	6	USBD1+
7	GND	8	GND
9	GND	10	GND

3.7 IRDA INFRARED INTERFACE PORT (IR1)

The AR-B1672 built-in IrDA port which support Serial Infrared (SIR) or Amplitude Shift Keyed IR (ASKIR) interface. When use the IrDA port have to set SIR or ASKIR model in the BIOS's Peripheral Setup's COM 2. Then the normal RS-232 COM 2 will be disabled.



PIN	Signal
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

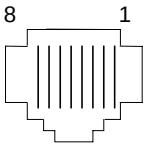
3.8 FAN CONNECTOR (FAN1)

The AR-B1672 provides CPU cooling Fan connector. CPU connectors can supply 12V/500mA to the cooling fan.

PIN	Signal
1	GND
2	+12V
3	SENSE

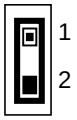
3.9 ETHERNET RJ45 CONNECTOR (LAN1)

The Ethernet RJ-45 connectors are the standard network headers. The following table is the pin assignment.



Pin	Signal	Pin	Signal
1	TX+	5	Not Used
2	TX-	6	RX-
3	RX+	7	Not Used
4	Not Used	8	Not Used

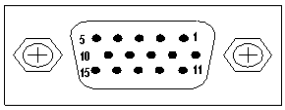
- **ENABLED/DISABLED LAN FUNCTION (JP1)**



JP1	FUNCTION
ON	Enable On Board LAN (Factory Preset)
OFF	Disabled On Board LAN

3.10 VGA CRT CONNECTOR (VGA1)

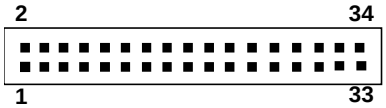
AR-B1672 built-in 15-pin VGA connector directly to your CRT monitor.



PIN	Signal	PIN	Signal	PIN	Signal
1	RED	6	GND	11	N.C
2	GREEN	7	GND	12	SDA
3	BLUE	8	GND	13	HSYNC
4	N.C	9	VCC	14	VSYNC
5	GND	10	GND	15	SCL

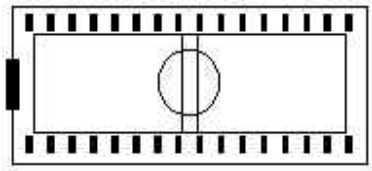
3.11 FLOPPY DRIVE CONNECTOR (FDD1)

The AR-B1672 provides a 34-pin header type connector for supporting up to two floppy disk drives. To enable or disable the floppy disk controller, please use the BIOS Setup program.



PIN	Signal	PIN	Signal
1-33(odd)	GROUND	18	DIRECTION
2	DRVEN 0	20	-STEP OUTPUT PULSE
4	NOT USED	22	-WRITE DATA
6	DRVEN 1	24	-WRITE GATE
8	-INDEX	26	-TRACK 0
10	-MOTOR ENABLE 0	28	-WRITE PROTECT
12	-DRIVE SELECT 1	30	-READ DATA
14	-DRIVE SELECT 0	32	-SIDE 1 SELECT
16	-MOTOR ENABLE 1	34	DISK CHANGE

3.12 DOC SOCKET (DOC1)



3.12.1 D.O.C. Memory Bank Address Select (JP2)

This section provides the information about how to use the D.O.C. (Disk On Chip). It divided into two parts: hardware setting and software configuration.

Step 1: Use JP2 to select the correct D.O.C. memory bank address.

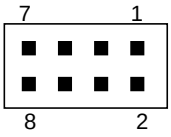
Step 2: Insert programmed Disk On Chip into sockets U18 setting as DOC.

Step 3: Line up and insert the AR-B1672 card into slot of your computer.

JP2

JP2	ADDRESS
ON	D000 (Factory Preset)
OFF	D200

3.13 GENERAL PURPOSE I/O (GPIO1)



Pin	Signal	Pin	Signal
1	GPI0	2	GPO0
3	GPI1	4	GPO1
5	GPI2	6	GPO2
7	GPI3	8	GPO3

3.13.1 GPIO Address Select (JP3)

JP3

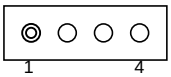
JP3	ADDRESS
ON	215H (Factory Preset)
OFF	77H

- Users could test GPIO function under 'Debug' program as follow:

C:>debug

- O 215 01H
  Generally, the GPIO2 Pin2 will be High Level, others output pin are Low Level.
- I 215
  FC
  Generally, suppose that GPIO1's Pin1 and Pin3 are High Level then will show "FC"

3.14 POWER CONNECTOR (PWR1, PWR2)



(PWR1)

PIN	Signal
1	+12V
2	GND
3	GND
4	VCC (+5V)

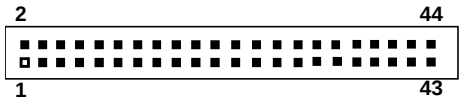
The PWR1 is a 4-pin power connector. It's the standard connectors on all Acrosser boards.

(PWR2)

PIN	Signal
1	-12V
2	-5V

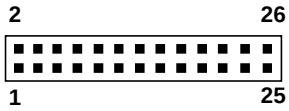
3.15 LCD & LVDS FUNCTION

3.15.1 18-Bits LCD PANEL CONNECTOR (LCD1)



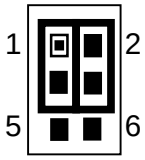
PIN	Signal	PIN	Signal	PIN	Signal
1	GND	16	(PD18)	31	R3
2	SFCLK	17	(PD19)	32	R4
3	GND	18	G0	33	R5
4	HSYNC	19	G1	34	GND
5	VSYNC	20	GND	35	LCDVCC
6	GND	21	G2	36	LCDVCC
7	(PD22)	22	G3	37	+12V
8	(PD23)	23	G4	38	+12V
9	B0	24	G5	39	GND
10	B1	25	(PD21)	40	GND
11	B2	26	(PD20)	41	DE
12	B3	27	GND	42	EBLT
13	GND	28	R0	43	GND
14	B4	29	R1	44	EVEE
15	B5	30	R2		

3.15.2 LVDS PANEL CONNECTOR (LVDS1)



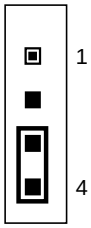
PIN	Signal	PIN	Signal
1	TXOUT0-	14	GND
2	GND	15	TXCLK+
3	TXOUT0+	16	VTX12
4	GND	17	TXOUT3-
5	TXOUT1-	18	VTX12
6	LVDSVCC	19	TXOUT3+
7	TXOUT1+	20	GND
8	LVDSVCC	21	VTKBP
9	TXOUT2-	22	N.C
10	N.C	23	LVDSVCC
11	TXOUT2+	24	N.C
12	GND	25	LVDSVCC
13	TXCLK-	26	N.C

3.15.3 LVDSVCC & LCDVCC VOLTAGE SELECT (LVDSV1)



LVDSV1	VOLTAGE
1-3 2-4 ON	+3.3V (Factory Preset)
3-5 4-6 ON	+5V

3.16 INTERNAL & EXTERNAL BUZZER (ESPK1)



PIN	Signal
1	VCC
2	SBEEP
3	INTERNAL BUZZER
4	SBEEP

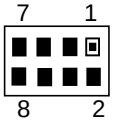
PIN 1,2: Connect to External BUZZER
3-4 ON (Factory Preset)
Use Internal BUZZER

3.17 RESET SWITCH (RST1)

Shorting these two pins will reset the system.

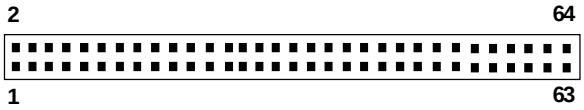
PIN	Signal
1	RST
2	GND

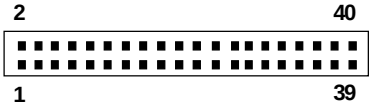
3.18 EXTERNAL LED HEADER (LED1)



Pin	INDICATION
1-2	Primary IDE Active
3-4	Secondary IDE Active
5-6	Watchdog Active
7-8	System Power

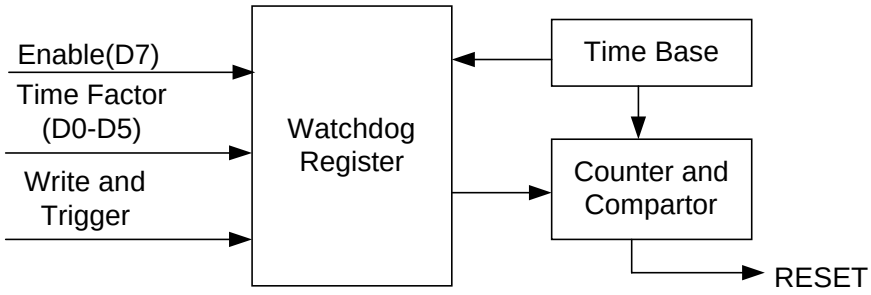
3.19 PC/104 CONNECTOR (PC-104)





4. WATCHDOG TIMER

This section describes the use of Watchdog Timer, including disable, enable, and trigger. AR-B1672 is equipped with a programmable time-out period watchdog timer that occupies I/O port **443H**. Users can use simple program to enable the watchdog timer. Once you enable the watchdog timer, the program should trigger it every time before it times out. Watchdog Timer will generate a response (system or IRQ9) due to system fails to trigger or disable watchdog timer before preset timer, times out.



Watchdog Block Diagram

4.1 WATCHDOG TIMER SETTING

The watchdog timer is a circuit that maybe be used from your program software to detect crash or hang up.
The Watchdog timer is automatically disabled after reset. Once you enabled the watchdog timer, your program should trigger the watchdog timer every time before it times out. After you trigger the watchdog timer, the timer will be set to zero and start to count again. If your program fails to trigger the watchdog timer before times out, it will generate a reset pulse to reset the system or trigger the IRQ 9 signal in order to tell your system that the watchdog time is out.

Please refer to the following table in order to properly program Watchdog function

	D7	D6	D5 D4 D3 D2 D1 D0
1	Enable	Reset	Time period
0	Disable	IRQ 9	

Users could test watchdog function under 'Debug' program as follows:

```
C:>debug
● O 443 C8H
  Generally, watchdog function would reset system after 8 seconds
● O 443 0
  Disable watchdog function
```

```
C:>debug
● O 443 88H
  Generally, watchdog function would generate IRQ 9 after 8 seconds
● O 443 0H
  Disable watchdog function
```

4.2 WATCHDOG TIMER TRIGGER

After you enable the watchdog timer, your program must write the same factor as triggering to the watchdog timer at least once during every time-out period. You can change the time-out period by writing another timer factor to the watchdog register at any time, and you must trigger the watchdog during every new time-out period in next trigger.

5. BIOS CONSOLE

This chapter describes the AR-B1672 BIOS menu displays and explains how to perform common tasks needed to get up and running, and presents detailed explanations of the elements found in each of the BIOS menus. The following topics are covered:

- BIOS Setup Overview
- Standard CMOS Setup
- Advanced CMOS Setup
- Advanced Chipset Setup
- Power Management
- PCI/Plug and Play
- Peripheral Setup
- Auto-Detect Hard Disks
- Password Setting
- Load Default Setting
- BIOS Exit

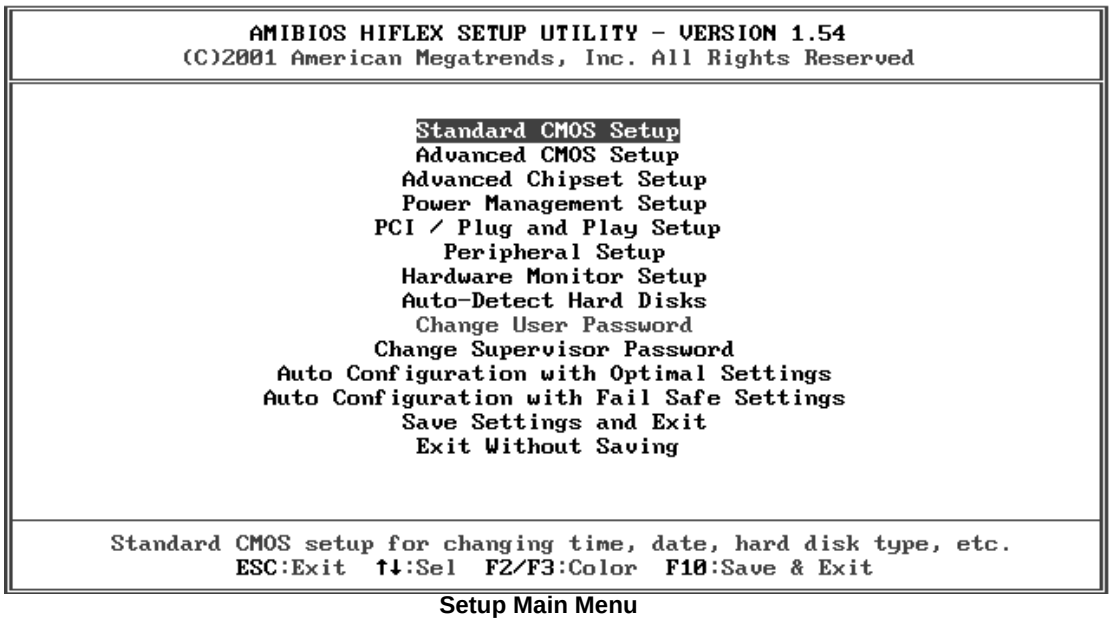
5.1 BIOS SETUP OVERVIEW

The BIOS is a program used to initialize and set up the I/O system of the computer, which includes the ISA bus and connected devices such as the video display, diskette drive, and the keyboard. The BIOS provides a menu-based interface to the console subsystem. The console subsystem contains special software, called firmware that interacts directly with the hardware components and facilitates interaction between the system hardware and the operating system.

The BIOS default values ensure that the system will function at its normal capability. In the worst situation the user may have corrupted the original settings set by the manufacturer.

After the computer is turned on, the BIOS will perform diagnostics on the system and display the size of the memory that is being tested. Press the [Del] key to enter the BIOS Setup program, and then the main menu will show on the screen.

The BIOS Setup main menu includes some options. Use the [Up/Down] arrow key to highlight the option that you wish to modify, and then press the [Enter] key to select the option and configure the functions.


AMIBIOS HIFLEX SETUP UTILITY - VERSION 1.54
(C)2001 American Megatrends, Inc. All Rights Reserved
Standard CMOS Setup
Advanced CMOS Setup
Advanced Chipset Setup
Power Management Setup
PCI / Plug and Play Setup
Peripheral Setup
Hardware Monitor Setup
Auto-Detect Hard Disks
Change User Password
Change Supervisor Password
Auto Configuration with Optimal Settings
Auto Configuration with Fail Safe Settings
Save Settings and Exit
Exit Without Saving
Standard CMOS setup for changing time, date, hard disk type, etc.
ESC:Exit ↑↓:Sel F2/F3:Color F10:Save & Exit

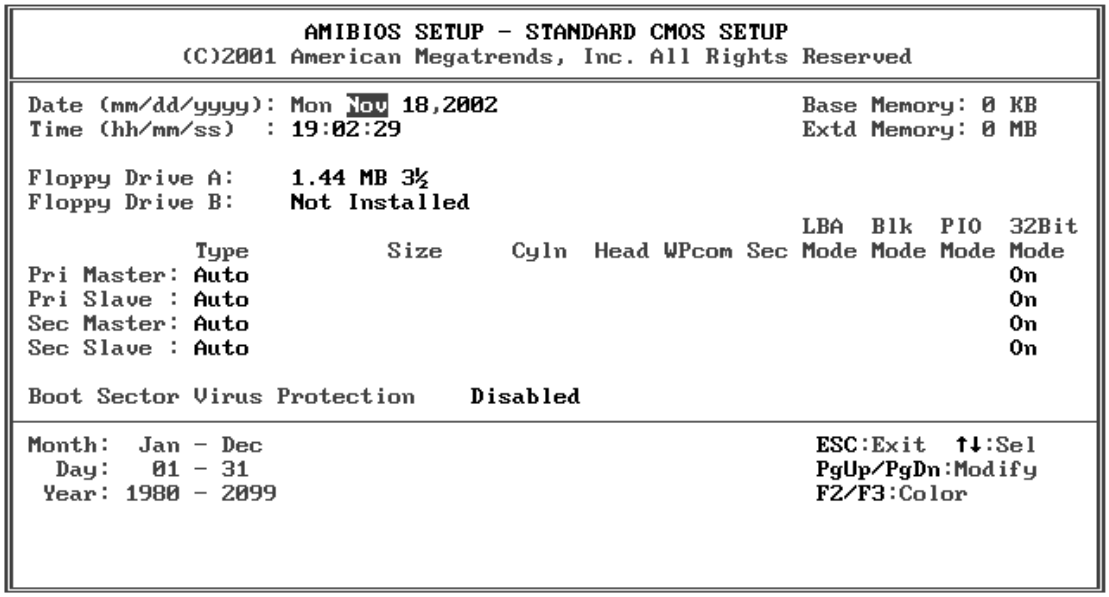
Setup Main Menu

CAUTION:

1. AR-B1672 BIOS the factory-default setting is used to the <Auto Configuration with Optimal Settings> Acrosser recommends using the BIOS default setting, unless you are very familiar with the setting function, or you can contact the technical support engineer.
2. If the BIOS settings are lost, the CMOS will detect the <Auto Configuration with Fail Safe Settings> to boot the operation system, this option will reduce the performance of the system. Acrosser recommends choosing the <Auto Configuration with Optimal Setting> in the main menu. This option gives best-case values that should optimize system performance.
3. The BIOS settings are described in detail in this section.

5.2 STANDARD CMOS SETUP

The <Standard CMOS Setup> option allows you to record some basic system hardware configuration and set the system clock and error handling. If the CPU board is already installed in a working system, you will not need to select this option anymore.


AMIBIOS SETUP - STANDARD CMOS SETUP
(C)2001 American Megatrends, Inc. All Rights Reserved
Date (mm/dd/yyyy): Mon Nov 18,2002
Time (hh/mm/ss) : 19:02:29
Base Memory: 0 KB
Extd Memory: 0 MB
Floppy Drive A: 1.44 MB 3½
Floppy Drive B: Not Installed
Type Size Cyln Head WPcom Sec LBA Mode Blk Mode PIO Mode 32Bit Mode
Pri Master: Auto On
Pri Slave : Auto On
Sec Master: Auto On
Sec Slave : Auto On
Boot Sector Virus Protection Disabled
Month: Jan - Dec
Day: 01 - 31
Year: 1980 - 2099
ESC:Exit ↑↓:Sel
PgUp/PgDn:Modify
F2/F3:Color

Standard CMOS Setup

Date & Time Setup

Highlight the <Date> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the month, day and year format.

Highlight the <Time> field and then press the [Page Up] /[Page Down] or [+]/[-] keys to set the current date. Follow the hour, minute and second format.

The user can bypass the date and time prompts by creating an AUTOEXEC.BAT file. For information on how to create this file, please refer to the MS-DOS manual.

Hard Disk Setup

The BIOS supports various types for user settings, The BIOS supports <Pri Master>, <Pri Slave>, <Sec Master> and <Sec Slave> so the user can install up to two hard disks. For the master and slave jumpers, please refer to the hard disk's installation descriptions and the hard disk jumper settings in section three of this manual.

You can select <AUTO> under the <TYPE> and <MODE> fields. This will enable auto detection of your IDE drives during boot-up. This will allow you to change your hard drives (with the power off) and then power on without having to reconfigure your hard drive type. If you use older hard disk drives, which do not support this feature, then you must configure the hard disk drive in the standard method as described above by the <USER> option.

Floppy Setup

The <Standard CMOS Setup> option records the types of floppy disk drives installed in the system.

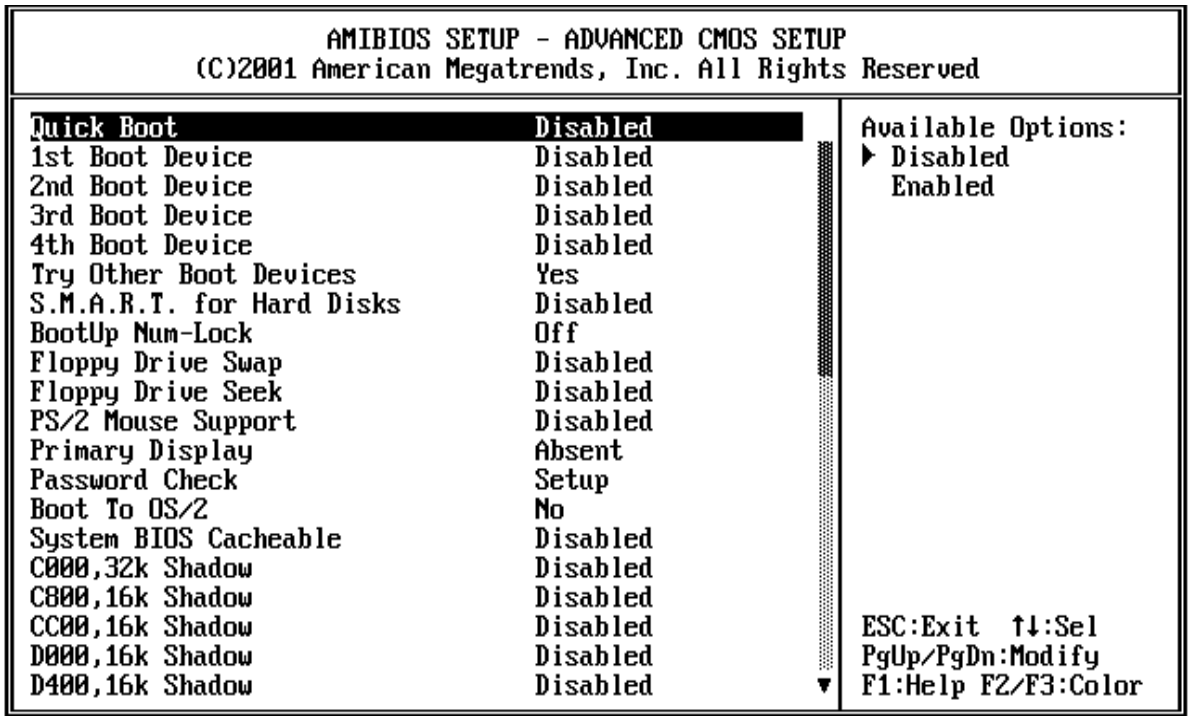
To enter the configuration value for a particular drive, highlight its corresponding field and then select the drive type using the left-or right-arrow key.

Boot Sector Virus Protection

This option protects the boot sector and partition table of your hard disk against accidental modifications. Any attempt to write to them will cause the system to halt and display a warning message. If this occurs, you can either allow the operation to continue or use a bootable virus-free floppy disk to reboot and investigate your system. The default setting is <*Disabled*>. This setting is recommended because it conflicts with new operating systems. Installation of new operating systems requires that you disable this to prevent write errors.

5.3 ADVANCED CMOS SETUP

The <Advanced CMOS Setup> option consists of configuration entries that allow you to improve your system performance, or let you set up some system features according to your preference. Some entries here are required by the CPU board's design to remain in their default settings.



Advanced CMOS Setup

Quick Boot

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to *Enabled*, BIOS will shorten or skip some check items during POST.

1st Boot Device

2nd Boot Device

3rd Boot Device

4th Boot Device

These options determine where the system looks first for an operating system.

S.M.A.R.T for Hard Disks

S.M.A.R.T is abbreviation of Self-Monitoring Analysis and Reporting Technology. It is reliable and precautious technology. When Hard Disk disorder, it prevents Hard Disk from the loss of data.

Boot Up Num-Lock

This item is used to activate the Num-Lock function upon system boot. If the setting is on, after a boot, the Num-Lock light is lit, and user can use the number key.

Floppy Drive Swap

The option reverses the drive letter assignments of your floppy disk drives in the Swap A, B setting, otherwise leave on the setting of *Disabled* (No Swap). This works separately from the BIOS Features floppy disk swap feature. It is functionally the same as physically interchanging the connectors of the floppy disk drives. When <*Enabled*>, the BIOS swapped floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A under DOS.

Floppy Drive Seek

If the <Floppy Drive Seek> item is setting *Enabled*, the BIOS will seek the floppy <A> drive one time upon boot up.

PS/2 Mouse Support

The setting of *Enabled* allows the system to detect a PS/2 mouse on boot up. If detected, IRQ12 will be used for the PS/2 mouse. IRQ 12 will be reserved for expansion cards if a PS/2 mouse is not detected. *Disabled* will reserve IRQ12 for expansion cards and therefore the PS/2 mouse will not function.

Primary Display

The option is used to set the type of video display card installed in the system.

Password Check

This option enables password checking every time the computer is powered on or every time the BIOS Setup is executed. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if the BIOS executed.

Boot to OS/2

When using the OS/2 operating system, you need to *Yes* this option otherwise leave this on the setup default of *No*.

System BIOS Cacheable

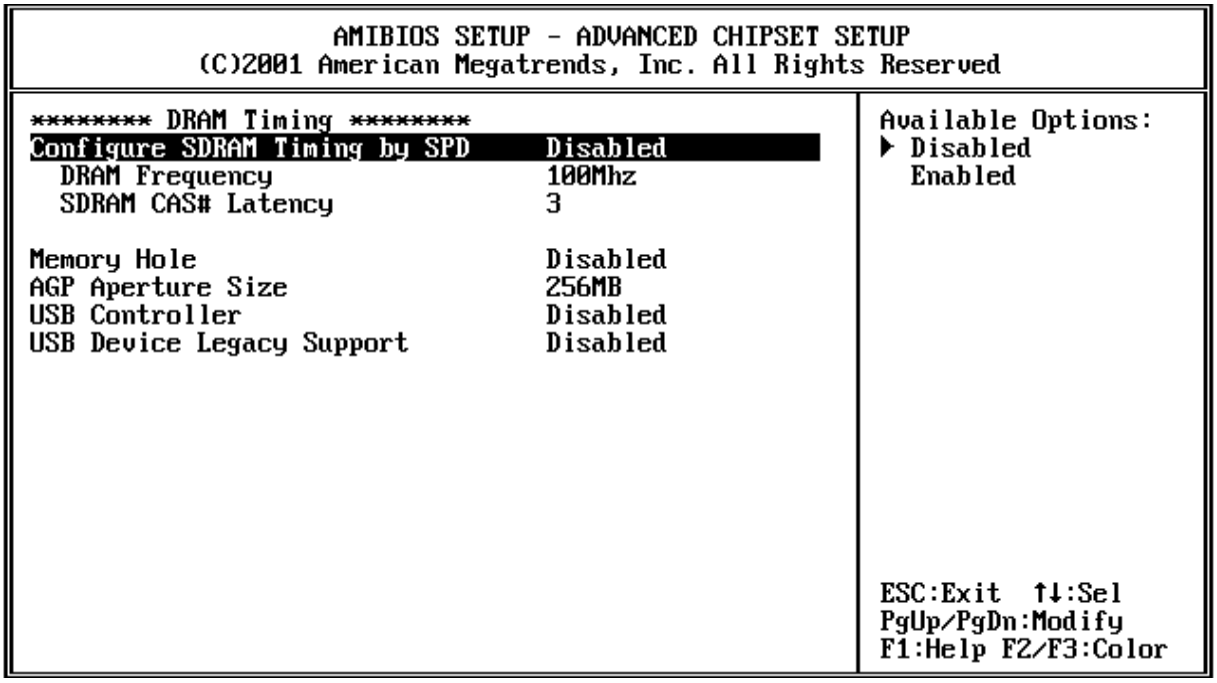
Enabled this option to enhance system performance by shadowing and caching system BIOS shadow functions will be ignored.

Shadow Memory

Each of segments provides three options ***Disabled, Enabled***, and ***Cached*** for faster adapter's ROM executions. However this shadow function is Chipset oriented and dependent on system hardware feature. In general, C000 64K will be allocated for VGA BIOS and set to Cached to get higher display performance by shadowing and caching feature. If user chooses Enabled setting, only BIOS shadow function is active.

5.4 ADVANCED CHIPSET SETUP

This option controls the configuration of the board's chipset. Control keys for this screen are the same as for the previous screen.



Advanced Chipset Setup

Configure SDRAM Timing by SPD

SPD is the abbreviation Serial Presence Detect. SPD takes accord the chip types, capacity, timing, voltage data. The system can auto adjust memory according to the data to reach the best situation.
The Choice: Enabled, Disabled

DRAM Frequency

PC-100 means the memory bus is running at 100MHz. PC-133 means the memory bus is running at 133MHz.
The Choice: 66Mhz, 100Mhz, 133Mhz

SDRAM CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.
The Choice: 2, 3

Memory Hole

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

AGP Aperture Size

The item is to set up AGP display to use how much memory to save Texture Data.

USB Controller

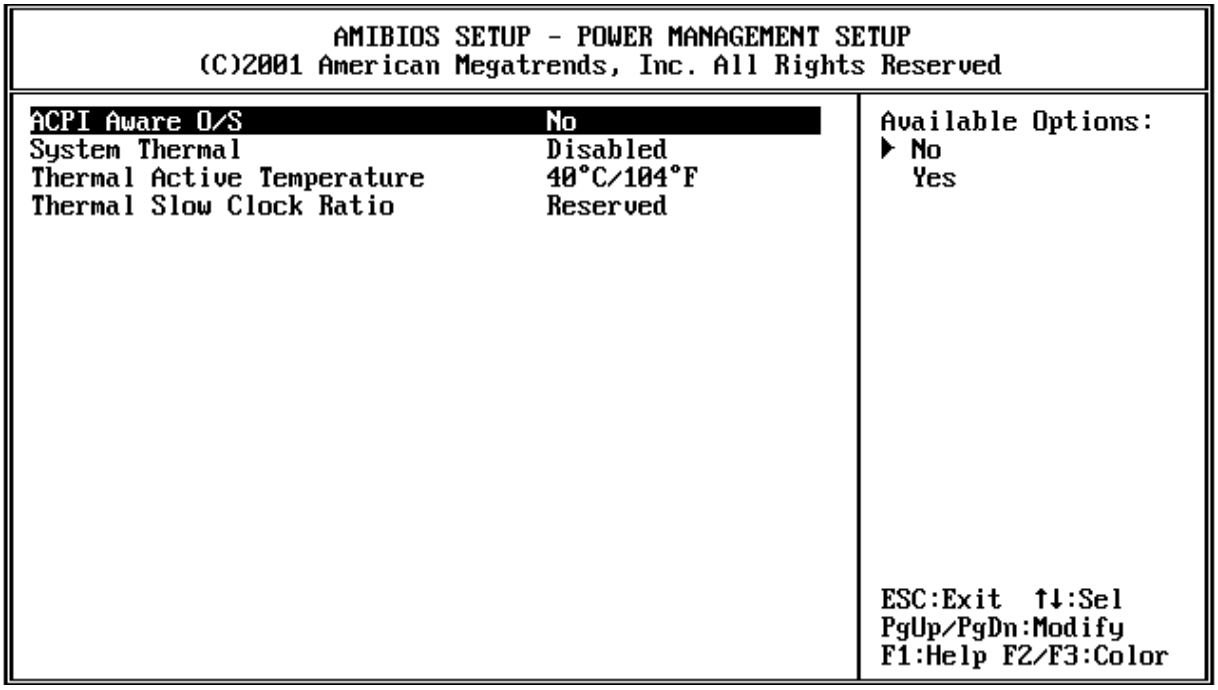
This option can enable USB Port 0&1or Disabled USB function.

USB Device Legacy Support

These options are used to e*nable* the USB function and it's only useful in the DOS mode. The USB function sets *Enabled* will occupy IRQ10.

5.5 POWER MANAGEMENT

This section is used to configure power management features. This <Power management Setup> option allows you to reduce power consumption. This feature turns off the video display and shuts down the hard disk after a period of inactivity.



Power Management

ACPI Aware O/S

The option ***YES*** is for **ATX power**, the option ***NO*** is for **AT Power**.

System Thermal

If the choice <monitor>is chose, the system will alarm when the system temperature is beyond the critical temperature.

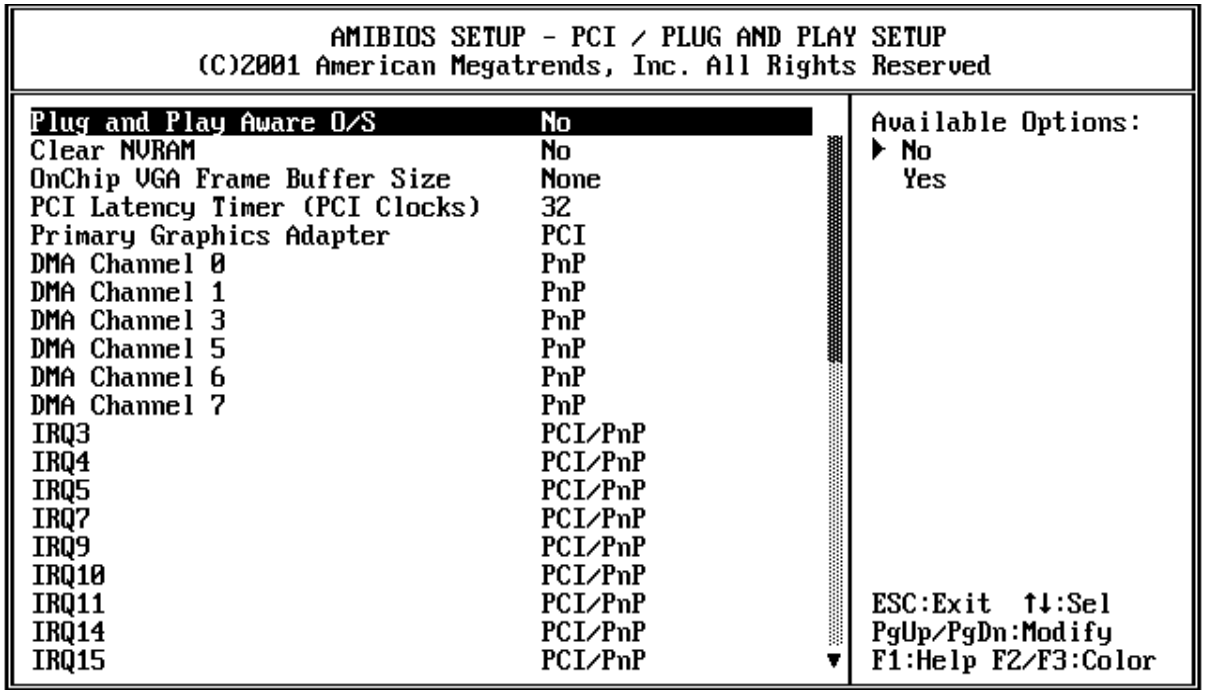
Thermal Active Temperature

Thermal Slow Clock Ratio

This item is to set up the Operating Frequency of system clock in power saving mode, to set a suitable clock frequency ratio, which between standard CPU clock and CPU clock in power saving mode when the temperature is beyond the critical temperature.

5.6 PCI/PLUG AND PLAY

This section is used to configure PCI / Plug and Play features. The <PCI & PNP Setup> option configures the PCI bus slots.



PCI / Plug And Play

Plug and Play Aware O/S

Set this option to *Yes* if the operating system installed in the computer is Plug and Play-aware. The BIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option <*No*> if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly.

Clear NVRAM

This sets the operating mode of the boot block area of the BIOS FLASH ROM to allow programming in the *Yes* setting.

PCI Latency Timer (PCI Clocks)

This option sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks.

Primary Graphic Adapter

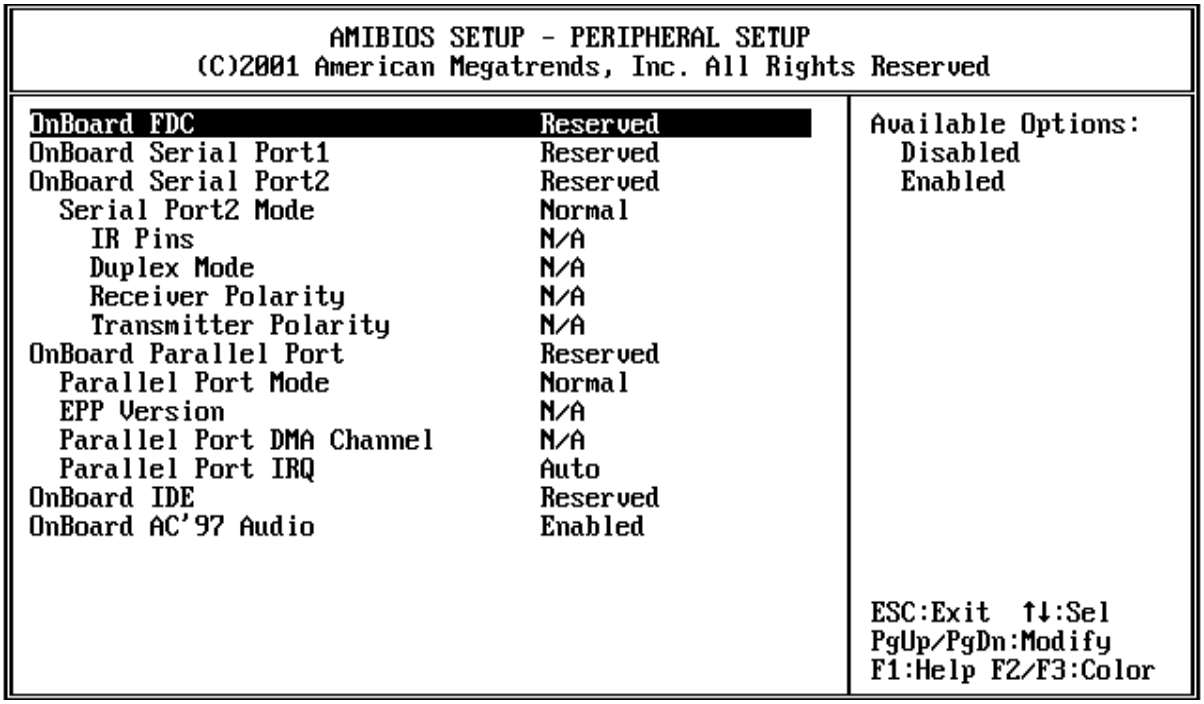
This option is set to use PCI bus or AGP. The AGP mode will get system a faster processing speed.

DMA & IRQ

These options specify the bus that the named IRQs/DMAs lines are used on. These options allow you to specify IRQs/DMAs for use by legacy ISA adapter cards. These options determine if the BIOS should remove an IRQ/DMA from the pool of availability of IRQs/DMAs passed to the BIOS configurable devices. If more IRQs/DMAs must be removed from the pool, the end user can use these PCI/PnP Setup options to remove the IRQ/DMA by assigning the option to the ISA/EISA setting. The onboard I/O is configurable with BIOS.

5.7 PERIPHERAL SETUP

This section is used to configure peripheral features.



Peripheral Setup

OnBoard FDC

This option enables the floppy drive controller on the AR-B1672.

OnBoard Serial Port

This option enables the serial port on the AR-B1672.

IR Port support

This item is to activate the function of Infrared.

OnBoard Parallel Port

This option enables the parallel port on the AR-B1672.

Parallel Port Mode

This option specifies the parallel port mode. ECP and EPP are both bi-directional data transfer schemes that adhere to the IEEE 284 specifications.

Parallel Port DMA Channel

This option is only available if the setting for the parallel Port Mode option is ECP.

OnBoard IDE

This option is to set up the operating mode of IDE controller. If the main board offers the enhanced I/O port, the choice should be <*Enabled*>.

OnBoard AC'97 Audio

This item allows you to decide to *Enabled*, *Disabled* the AC'97 Audio.

5.8 AUTO-DETECT HARD DISKS

This option detects the parameters of an IDE hard disk drive, and automatically enters them into the Standard CMOS Setup screen.

5.9 PASSWORD SETTING

This BIOS Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system boots or when BIOS Setup is executed. User can set either a Supervisor password or a User password.

Select the appropriate password icon (Supervisor or User) from the Security section of the BIOS Setup main menu. Enter the password and press [Enter]. The screen does not display the characters entered. After the new password is entered, retype the new password as prompted and press [Enter].

If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press [Esc] to return to the BIOS Main Menu. The password is stored in CMOS RAM after BIOS completes. The next time the system boots, you are prompted for the password function is present and is enabled.

```
Enter new supervisor password:
```

5.10 LOAD DEFAULT SETTING

This section permits users to select a group of settings for all BIOS Setup options. You not only can use these items to quickly set system configuration parameters, but also can choose a group of settings that have a better chance of working when the system is having configuration related problems.

5.10.1 Auto Configuration with Optimal Setting

The user can load the optimal default settings for the BIOS. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the optimal settings are loaded automatically.

```
Load high performance setting (Y/N) ? Y
```

5.10.2 Auto Configuration with Fail Safe Setting

The user can load the Fail-Safe BIOS Setup option settings by selecting the Fail-Safe item from the Default section of the BIOS Setup main menu.

The Fail-Safe settings provide far from optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically.

```
Load failsafe settings (Y/N) ? Y
```

5.11 BIOS EXIT

This section is used to exit the BIOS main menu. After making your changes, you can either save them or exit the BIOS menu and without saving the new values.

5.12 BIOS UPDATE

The BIOS program instructions are contained within computer chips called FLASH ROMs that are located on your system board. The chips can be electronically reprogrammed, allowing you to upgrade your BIOS firmware without removing and installing chips.
The AR-B1672 provides the FLASH BIOS update function for you to easily to update to a newer BIOS version. Please follow these operating steps to update to new BIOS:

Step 1: Turn on your system and don't detect the CONFIG.SYS and AUTOEXEC.BAT files.

Step 2: Insert the FLASH BIOS diskette into the floppy disk drive.

Step 3: In the MS-DOS mode, you can type the FLASH826 program.

A:\>FLASH826

Step 4: Press [ALT+F], The <File> box will show the following message, this message will be highlighted.

BIOS Filename Loading … . After typing in the File name you must press<ENTER> or press <ESC> to exit.

Step 5: And then please enter the file name to the <Enter File Name> box. And the <Message> box will show the following notice.

Are you sure to write the BIOS into flash ROM?

Step 6: Press the <Enter> key to update the new BIOS.
Then the <Message> box will show the <Programming now …>.

Step 7: When the BIOS update is successful, the message will show <Flash ROM Update Completed - Pass>.

APPENDIX A. ADDRESS MAPPING

IO Address Map

I/O MAP	ASSIGNMENT
000-01F	DMA controller (Master)
020-021	Interrupt controller (Master)
022-023	Chipset controller registers I/O ports.
040-05F	Timer control registers.
060-06F	Keyboard interface controller
070-07F	RTC ports & CMOS I/O ports
080-09F	DMA register
0A0-0BF	Interrupt controller (Slave)
0C0-0DF	DMA controller (Slave)
0F0-0FF	Math coprocessor
1F0-1F8	Hard Disk controller
250-258	Super I/O
2B0-2DF	Graphics adapter controller
2F8-2FF	Serial port-2
360-36F	Net work ports
378-37F	Parallel port
3B0-3BF	Monochrome & Printer adapter
3C0-3CF	EGA adapter
3D0-3DF	CGA adapter
3F0-3F7	Floppy disk controller
3F8-3FF	Serial port-1

Memory Map:

MEMORY MAP	ASSIGNMENT
0000000-009FFFF	System memory used by DOS and application
00A0000-00BFFFF	Display buffer memory for VGA/ EGA / CGA / MONOCHROME adapter
00C0000-00DFFFF	Reserved for I/O device BIOS ROM or RAM buffer.
00E0000-00EFFFF	Reserved for PCI device ROM
00F0000-00FFFFF	System BIOS ROM
0100000-FFFFFFF	System extension memory

APPENDIX B. INTERRUPT REQUEST (IRQ)

SETTING	HARDWARE USING THE SETTING
00	System timer
01	Standard 101/102-Key or Microsoft Natural Keyboard
02	Programmable interrupt controller
03	Serial Port (COM2)
04	Serial Port (COM1)
05	IRQ Holder for PCI Steering
06	Floppy Disk Controller
07	Parallel Port (LPT1)
08	RTC clock
09	ACPI
12	PS/2 Compatible Mouse Port
13	Numeric data processor
14	Primary IDE controller
15	Secondary IDE controller

Note:
If the content in Setting is inconsistent with CD-ROM. Please refer to the Setting as priority.